IN THE CLAIMS

Please amend the claims as follows:

1.-82. (Cancelled)

83. (New) A method of detecting the presence or measuring the quantity of a target analyte in a sample reagent, comprising:

positioning the sample reagent on a biosensor, the biosensor including electrically conductive electrodes positioned on a substrate, each of the electrodes consisting of a single layer of an electrically conductive material;

controlling a potential difference between two of the electrodes; and

measuring an electrical signal from the biosensor so as to determine the presence and/or quantity of the target analyte in the sample reagent.

84. (New) The method of claim 83, wherein the electrochemical biosensor includes an adhesive underneath each of the electrodes, the adhesive allowing for better adhesion of each of the electrodes to the substrate.

85. (New) The method of claim 83, wherein the sample reagent is a biological fluid containing macromolecules.

86. (New) The method of claim 83, wherein the sample reagent is a biological fluid containing ionic molecules or atoms.

87. (New) The method of claim 83, wherein the substrate is selected from the group consisting of silicon, gallium arsenide, plastic and glass.

88. (New) The method of claim 83, wherein the substrate comprises a material made out of silicon.

89. (New) The method of claim 83, wherein the electrically conductive material is selected from the group consisting of gold, aluminum, chromium, copper, platinum, titanium, nickel and titanium.

90. (New) The method of claim 83, wherein the electrically conductive material is gold.

91. (New) The method of claim 84, wherein the adhesive is selected from the group of consisting of chromium, titanium, and glue.

92. (New) The method of claim 84, wherein the adhesive includes chromium.

93. (New) The method of claim 83, wherein the substrate further includes a well structure containing at least one of the electrodes.

94. (New) The method of claim 83, wherein each of the electrically conductive electrodes consists of a single layer of gold.

95. (New) The method of claim 83, wherein determining from the signal output the presence and/or quantity of the target analyte in the reagent further comprises: calibrating the electrochemical biosensor with a first calibrating solution that contains a known amount of the target analyte to be detected and a second calibrating solution that contains an undetectable amount of the target analyte to be detected; obtaining a reference signal output; and comparing the reference signal with the measured signal to determine the presence and/or quantity of the molecules in the sample reagent.

96. (New) The method of claim 83, wherein the electrically conductive material is selected from the group consisting of gold, aluminum, chromium, copper, platinum, nickel and titanium.

97. (New) The method of claim 83, wherein the electrically conductive material is gold.

98. (New) The method of claim 83, wherein a surface on at least one of the electrodes is surface modified for anchoring molecules on the surface.

99. (New) The method of claim 83, wherein the electrodes are in contact with the substrate.

100. (New) The method of claim 83, wherein the electrically conductive material associated with each electrode extends from each electrode to an electrical pad positioned on the substrate.

101. (New) The method of claim 83, wherein each of the electrodes is constructed of the same material.

102. (New) The method of claim 91, wherein each of the electrodes has a different shape.

103. (New) The method of claim 83, wherein the sample reagent is a liquid.

104. (New) The method of claim 83, wherein contacting the microfabricated electrochemical biosensor with the sample reagent includes forming a drop of the sample reagent over the electrodes.

105. (New) The method of claim 83, wherein two of the electrodes extend about a periphery of another of the electrodes.

106. (New) The method of claim 83, wherein controlling the potential difference between two of the electrodes by application of a current through a third of the electrodes includes controlling the potential difference between a reference electrode and a working electrode by application of a current through a counter electrode, the reference electrode and the counter electrode extending about a periphery of the working electrode.

107. (New). The method of claim 107, wherein the counter electrode and the reference electrode are each separated from the working electrode by 200 μm to 220 μm.

108. (New). The method of claim 83, wherein the potential difference between the two electrodes is controlled by application of a current through a third one of the electrodes.

109. (New) The method of claim 83, wherein measuring the electrical signal includes measuring an electrical signal from the electrodes.

110. (New) The method of claim 109, wherein the measured signal indicates the electrical current through a working electrode.

111. (New) The method of claim 83, wherein the electrical signal is measured while the potential difference is controlled.

112. (New) The method of claim 83, wherein the sensor consists of the electrodes positioned on the substrate.

113. (New) The method of claim 83, wherein the sensor occupies an area of 160 μm^2 to 25 mm^2.